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AUTHOR	Lopes da Silva, Gabriela: And Others
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ABSTRACT

This report describes the Swedish International Development Authority's (SIDA) cooperative project in Information and Documentation (I&D), an effort to introduce modern methods for information services to research and development in Portugal. SIDA's work in the following areas is examined: (1) education in information science for Portuguese information officers, (2) introduction of a computerized current awareness system in Portugal, (3) establishment of contacts with suppliers of interactive retrospective services, (4) production of a union catalog of periodicals available in Portuguese libraries, (5) establishment of contacts with international organizations and people in the field of information science, and (6) creation of a library in information science. Appendices provide a list of abbreviations used in the report as well as sample seminar agendas. (FM)

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REPORT TRITA-LIB-1094 JULY 1979

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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SWEDISH-PORTUGUESE COOPERATION IN THE FIELD OF SCIENTIFIC AND TECHNICAL INFORMATION AND DOCUMENTATION

Progress report for Phase One
1975 -- 1978

Gabriela Lopes da Silva [x]
Gunnar Carlsson [xx]
Malin Edström [xx]

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

[x] Centro de Documentacao Cientifica e Técnica
Av. Prof. Gama Pinto, 2
LISBOA 4
Portugal

[xx] Royal Institute of Technology Library
100 44 STOCKHOLM
Sweden

IR000090

ABSTRACT

The Swedish International Development Authority (SIDA) has since 1975 been running a cooperation program in the field of education. One project within this program falls in the field of Information and Documentation (I&D). The general goal for the I&D project was the introduction of modern methods for information services to research and development in Portugal. The work has been concentrated to the following main areas:

- Education in information science for Portuguese information officers.
- Introduction of a computerized current-awareness system in Portugal.
- Establishment of contacts with suppliers of interactive retrospective services.
- Production of a Union Catalogue of periodicals available in Portuguese libraries.
- Establishment of contacts with international organizations and people in the field of information science.
- Creation of a reference library in the field of information science.

The Swedish part of the work has been performed by the Royal Institute of Technology Library (RITL). The Portuguese counterpart has been Centro de Documentação Cientifica e Técnica (CDCT), an organization that was formally established at the beginning of the program.

Although parts of the project have been delayed due to practical and administrative problems, the main objectives have now been fulfilled, and CDCT is currently giving I&D services in Portugal.

BACKGROUND

Early in 1975 discussions were started regarding the possibility of co-operation between Portugal and Sweden in the field of education. In these discussions Portugal expressed a desire for cooperation in the the field of information and documentation services. As a first step in exploring and defining these cooperation activities, two Portuguese experts made a visit to the Information and Documentation Center at the Royal Institute of Technology Library (IDC-RITL) in Stockholm in November, 1975. This visit was followed up by a visit to Portugal in February, 1976, by two representatives of the Royal Institute of Technology Library (RITL) for the purpose of planning the future cooperation project.

The general goal of the cooperation was the introduction of modern methods for information services to research and development work in Portugal. A decision was made to use the Swedish EPOS/VIRA system developed at RITL in Stockholm for current awareness, and interactive search services available in Europe for retrospective services.

The plans for the cooperation were made during the spring of 1976 and are described in Report TRITA-LIB-1072 of June, 1976, Swedish-Portuguese Cooperation in the Field of Scientific and Technical Information and Documentation prepared by Roland Hjerppe; and in TRITA-LIB-1082 of June, 1977, Revised Programme Proposal for the Swedish-Portuguese Cooperation in the Field of Scientific and Technical Information and Documentation prepared by Roland Hjerppe, Carlos Pulido and Gabriela Lopes da Silva.

All according to the plans, cooperation started in the spring of 1976 by two Portuguese information officers and the systems programmer coming to Sweden to learn how to handle the Swedish SDI (Selective Dissemination of Information) system.

Unfortunately there were delays in Portugal. In September, 1976, CDCT (Centro de Documentação Cientifica e Técnica) was formally established, but the personnel were not appointed until March, 1977.

In the reports describing the plans 25 proposals were stated for the co-operation project, most of which have since been fulfilled. The 2nd proposal states the role of CDCT in Portugal.

According to this proposal CDCT should:

- be the central and coordinating information and documentation center within the Ministry of Education;
- be a "center of excellence" and "primary resource center" for scientific documentation;
- be the international focal point for information and documentation;
- be a "change agent" for the library system in Portugal;
- promote awareness of information in research as a resource;
- promote the development of modern information services;
- promote the utilization of information services;
- maintain inventories of research projects and researchers;
- maintain inventories of scientific publications in Portugal;
- coordinate the utilization of library resources;
- produce bibliographic files on literature of special interest to Portugal, e.g. wine, cork.

As well as giving information services (current-awareness and retrospective) to Portugal and compiling a union catalogue (of periodicals), CDCT is active in several of the roles stated above:

- It is active in a working group preparing the new laws that will govern the libraries and librarianship as well as the career for people in the field of library and information science.
- Contacts have been taken with the International Translation Centre in Delft for CDCT to act as their focal point in Portugal.
- It is active within EUSIREF (European Scientific Information Referral) as the referral focal point in Portugal.
- Being the documentation center of INIC (Instituto Nacional de Investigacáo Cientifica), CDCT has been asked to prepare the compilation of a file on current research projects in Portugal sponsored by them.

Through the seminars held in June, 1977, CDCT became known to people in libraries, research and development work. From then on there has been a growing increase in the demand for services.

Two more information officers were appointed during the autumn of 1977 and a course in EPOS/VIRA was held in November of that year. Of the six persons who attended this course, two are still working at CDCT and one is working in Vila Real in the north of Portugal. Two are at the documentation department of the Ministry of Education and one is building up a documentation department at the recently established Instituto Nacional de Frio. In this way the service from CDCT is decentralized and is available through many organizations not only in Lisbon, although the searches and results are channelled through CDCT.

The aim of an information center is to give the right information to the right person at the right time. One way of doing this is by finding references to literature. But the work is not finished there; the full source is to be identified and found. In order to be able to accomplish this, CDCT has started using computer facilities to compile a catalogue of all periodical publications available in libraries in Portugal. This was already the responsibility of CDC (Centro de Documentação Cientifica), which prepared it by manual methods. CDC is now an integral part of CDCT. The first Union Catalogue, covering about 44 libraries, is now available and a second edition is planned for publication in the first quarter or 1979.

But since it is not possible to find all documents in one country, CDCT has established contacts with clearing-houses in several countries. CNRS (Centre National de la Recherche Scientifique et Technique) in Paris, France, holds a deposit library for all French technical literature and has a very good cooperation with the East European countries. The British Library Lending Division (BLLD) situated in Boston Spa, United Kingdom, has a leading role in Europe as a clearing-house with good contacts all over the world. The National Technical Information Service (NTIS) in Springfield, Virginia, USA, keeps the deposit library for reports from all government-sponsored research projects in the USA; and through the University Microfilms Library at Ann Arbor, Michigan, USA, many sources that are difficult to obtain can be found.

The Information Science field is an exceedingly international field. Relations with similar bodies in other countries are important in order to be able to share knowledge and resources. It is important for information officers and organizations to attend conferences and meetings in various countries and also to be members of various associations. One important association is EUSIDIC (European Association of Information Services) consisting of organizations responsible for information services throughout Europe. As a member of this organization, CDCT has been asked to become a EUSIREF center in Portugal. This means that people in need of certain information can come to CDCT and get help to contact any organization in Europe that has got this information. Someone at CDCT should know what information is available where and how to access it. In order to be able to manage this, EUSIREF members are invited by the Commission of the European Communities (CEC) to meetings in Luxembourg three times a year. At these meetings, which are supposed to be rather informal, information about the activities in the different countries is presented and discussed.

Although a lot of interesting material is presented at conferences, the most important information is received "backstage" where the informal discussions depict what is really happening in the field. So it is very important that conferences are attended by the staff of information organizations in order for them to get contacts with other people and to get perspectives on their own work. A center that is active in this way will get better means for building up a good service in its own country.

The staff of CDCT consists of 19 people:

- the head of CDCT with six people aiding him and the rest of the staff with administration, clerical work, accounting, and copying services;
- the cataloguing department consisting of seven people responsible for all the work with the Union Catalogue including visiting the different libraries to identify their resources, and also responsible for supplying the ultimate users with the full documents;
- the information department consisting of five people responsible for information searches, distribution, and maintenance of the computerized system.

Some of the projects activities are described below in more detail.

CURRENT-AWARENESS SERVICE

In the spring of 1976 two Portuguese information officers spent two months in Sweden in order to learn, among other things, how to handle the Swedish SDI system EPOS/VIRA. Since there was a delay in establishing CDCT as an organization, no real marketing was carried out until June, 1977, when two seminars were held in Portugal in order to present the activities of CDCT. From this moment there has been an increasing interest for SDI in Portugal, as can be seen in Fig. 1.

The subscriber to the SDI service states his problem to an information officer who formulates the problem into search profiles adapted to the appropriate databases. One problem or query is regarded as the unit for subscription, although a query is matched on an average against five databases. The databases cover a large compass of science, but at the same time references to one field may be found in several databases. The information officers working with the profiles have to know the databases well in order to be able to give a good service. Manuals have been prepared for all the databases searched by the EPOS/VIRA system, thoroughly describing the contents and facilities of the databases. These manuals have been translated into English and sent to CDCT. All information on what is currently happening within the SDI service is sent out as newsletters.

All profiles are stored on a disc at the Stockholm University Computing Center (QZ). Transactions for the updating of profiles and the addition of new profiles are sent from a terminal at IDC-RITL that accesses the computer by dial-up connections. So far it is not possible to dial direct from Portugal to Sweden, so the profiles have to be entered at IDC although the actual profiling work is done in Portugal.

Two identical terminals with cassette drives are installed at CDCT and IDC-RITL. The profile transactions are entered on the cassette at CDCT and mailed to IDC where they are entered into EPOS through the Swedish

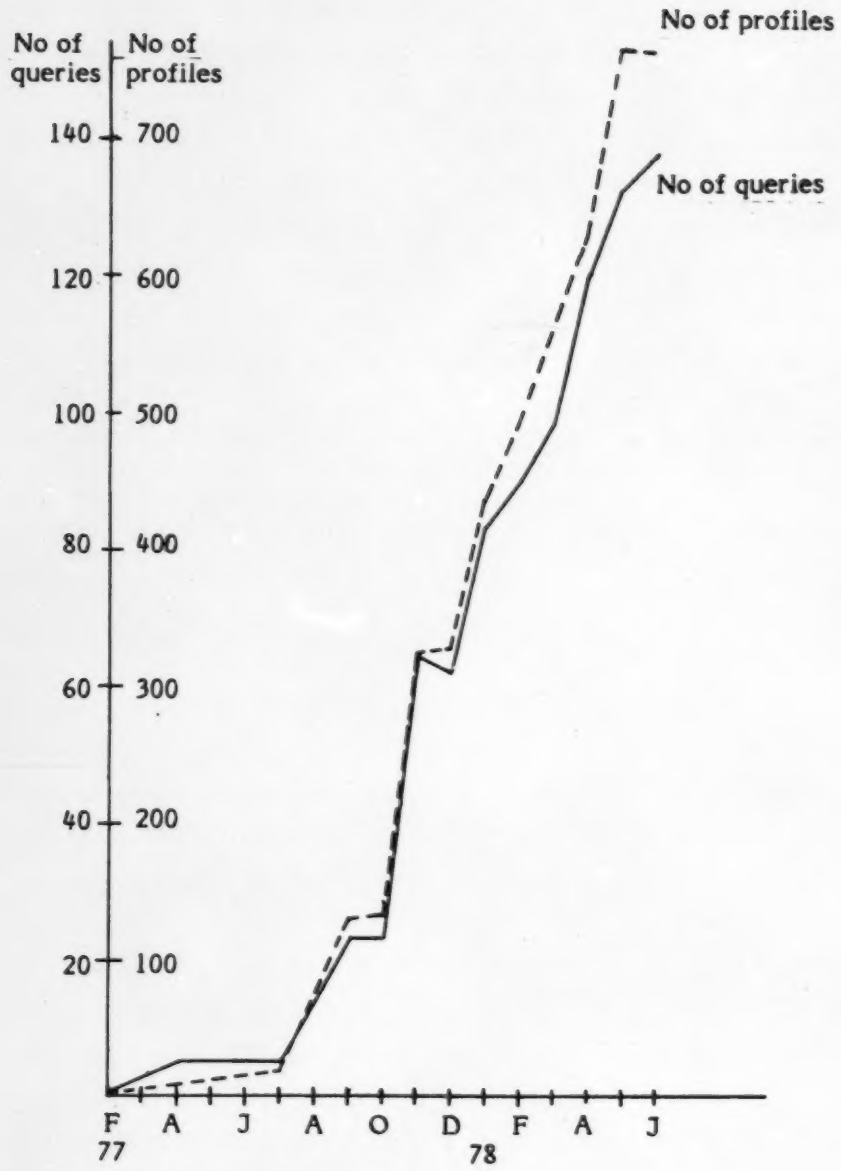

Fig.1. Number of queries and profiles currently subscribed through CDCT.

terminal. The profile printouts are then briefly checked and corrected before being mailed back to CDCT. Each profile carries an indication of the database(s) it is to be matched against. When a database is searched, all profiles indicated with that database name are searched at the same time. The result of the search is printed on cards, and the CDCT result is mailed to CDCT from where it is distributed to the subscribers of the profiles. Another copy of the search result is prepared from the computer tape on COM-fiche (COM = Computer Output Microform). This fiche is also mailed to CDCT where it is kept. CDCT have then got a complete record on how all their profiles are running and can check and modify the queries if necessary. The fiche are also used for back-up service, i.e. as a tool in the process of providing the subscriber with the whole paper that he has got a reference to.

Already at the beginning of the cooperation it was decided to implement EPOS/VIRA in Portugal. In May, 1976, MS from Centro de Calculo das Universidades de Lisboa (CCUL) came to Stockholm to study the system. However in December, 1976, he left CCUL, and shortly afterwards MJFS was appointed to CDCT as a systems engineer.

In July, 1977, the systems engineer responsible for EPOS/VIRA at IDC-RITL came to Lisbon to help with the implementation of the system at CCUL, but met with some problems. The operating system was not working properly and one of the modules in VIRA was erroneous. A new module was sent to CDCT later in the summer, but then another module was not working. Besides CCUL never managed to work the operating system properly, so in January, 1978, the system was transferred to the IBM Center in Lisbon. Because of too much work at the IBM Center and prevailing difficulties with VIRA there were more delays, but in June, 1978, most problems were solved.

The work of reformatting the tapes to be run on EPOS/VIRA has started at IDC-RITL, and by the beginning of 1979 an SDI service is expected to be given from CDCT from tapes treated in Portugal.

INTERACTIVE SEARCHES

As soon as CDCT could start working in Lisbon contact was established with Association Nationale de la Recherche Technique (ANRT) in France, in order to get a contract that would allow access to the ESA-RECON system (the interactive information system available from the European Space Agency (ESA) through the French network CYCLADES. In order to get a good communication with any search system it is usually necessary to secure a direct connection and not go through a switchboard. So far it is not possible to get an automatic connection to Italy from Portugal; therefore it was necessary to go through another country that had connection with the RECON network. The closest entry point was in France and so the RECON contract was signed with ANRT. Spain would have been more convenient but the ESA concentrator in Madrid was not yet operational at the time.

The first online searches done in Portugal took place during the seminars in June, 1977, but for almost six months only one person, GLS, knew how to do online searches: as a result not much marketing could be done and regular growth in demand could not be coped with. Any service relying on a single person is very much at the mercy of the "human factor". This has to be born in mind when looking at Fig. 2. Thus the peak shown in November is a consequence of cumulated demands during September and October when GLS was absent for quite long periods; in August, most potential users were on vacation.

Some promotion was done in December on the occasion of a National Meeting for Chemists held in Lisbon, in February when a National Meeting for Physicists took place, and in March when a National Meeting for Exceptional Children's Education took place.

With the two new information officers that had been trained during November in Lisbon and further in Stockholm in the spring of 1978, it was possible to deal with a larger number of requests, so CDCT continued with some promotion either by performing demonstrations during scientific meetings or by sending leaflets to certain institutions.

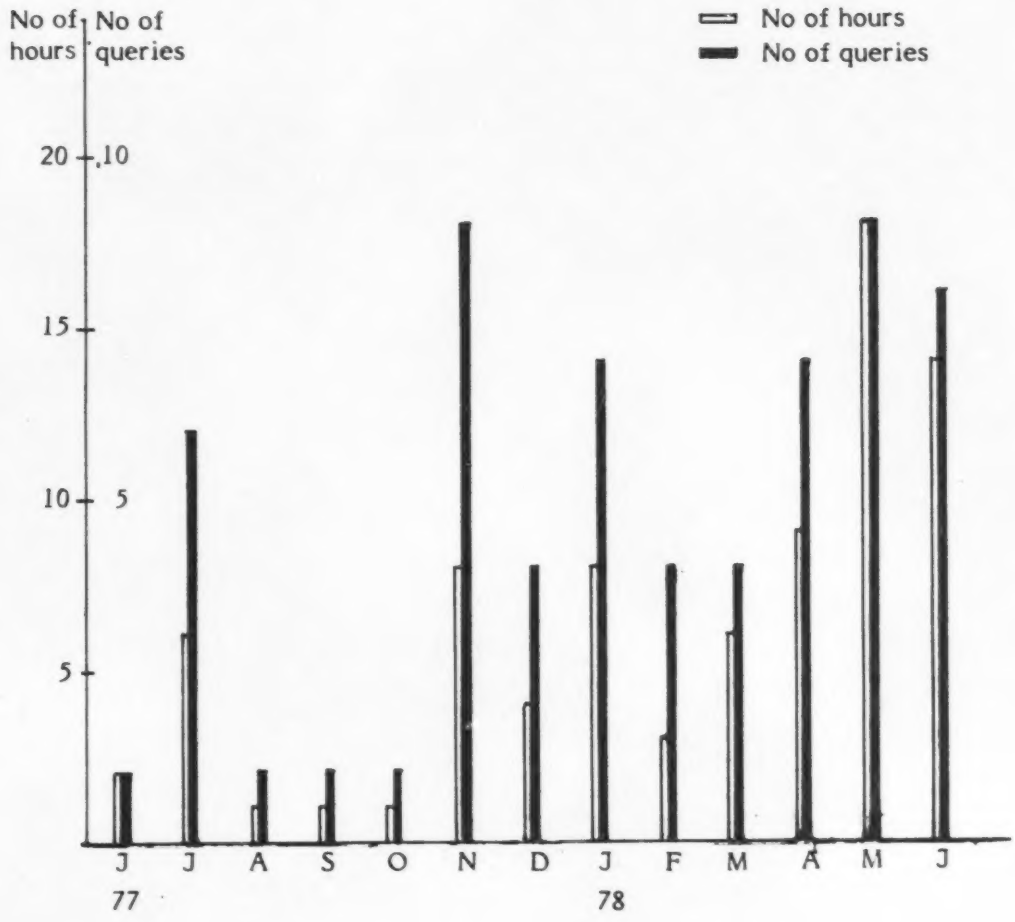

Fig. 2. Number of connect hours and queries for online retrospective searches performed at CDCT.

In March, 1978, a contract was signed with the British Library for access to BLAISE. Some demand from the medical field had been detected and it was planned to spread CDCT online facilities as much as possible in cooperation with other information and documentation services.

Negotiations begun in January, 1978, with Lockheed (DIALOG) and SDC (ORBIT) gave CDCT in the spring access to these systems through the Spanish node of TELENET. Due to the similarity of DIALOG to RECON that system is preferred to ORBIT whenever a choice is possible. Further training and better knowledge of the databases are needed in order to be able to take better advantage of the considerable possibilities of the different systems.

UNION CATALOGUE

A first paper edition of the Union Catalogue of periodicals in the Portuguese libraries was published in March, 1978. It contains about 4,000 titles distributed among 44 libraries situated in Lisbon, Porto and Coimbra.

It was decided to publish this first edition despite its small size because publication was considered to be a good way of:

- motivating libraries to cooperate with CDCT;
- getting comments on the catalogue;
- stimulating the personnel involved by making possible a demand for their work;
- alerting the decision-making bodies of the different institutions to the usefulness of such a tool for improving acquisition coordination;
- getting the approval of decision-making bodies as to cooperation between libraries, as a result of the preceding item.

The use of microforms is not much spread in Portugal so it was decided to postpone the microfiche edition of the Union Catalogue, the paper edition being easier to handle.

It must be admitted that the results of two years of work in this field are not too encouraging, nevertheless there are many explanations for these results:

- Reluctancy in accepting new ways of performing traditional manual tasks.
- Lack of evaluation of tasks in terms of cost-effectiveness, particularly excessive rechecking.
- Bad quality of data supplied by libraries, thus requiring a detailed verification.
- Non-availability of updated catalogues that would enable control of data reliability.
- Lack of personnel.

Some of the difficulties have been overcome during these two years and productivity is increasing. Lack of personnel seems to be the most difficult problem to solve, so far.

A second edition of the Union Catalogue containing about 10,000 titles is now in preparation and will be published in the first quarter of 1979.

EDUCATION ACTIVITIES

In order to be able to build up an information service from scratch it is necessary to know what has already happened in the field, what sources are available, and how to do the actual work. Since it was agreed that CDCT should use the SDI service available through IDC-RITL and also later implement the IDC search program EPOS/VIRA for their own SDI service, it was decided that the best way of learning the system for the CDCT staff was to learn it on site at IDC in Stockholm. This would at the same time give them the opportunity to work at an established information center and to follow the daily problems, as well as to learn how to use the different online systems used by IDC. Thus two Portuguese information officers, GLS and AS, spent two months at IDC in the spring of 1976. During this period they were given practical training in the handling and utilization of the SDI system EPOS/VIRA and the ESA-RECON system for retrospective searches.

The aim of this was that afterwards GLS and AS should be able to perform the whole work by themselves in Portugal. Their work at IDC was performed in close cooperation with the whole IDC staff. Unfortunately AS left CDCT in March, 1977.

Since no good documentation on the EPOS/VIRA system existed it was agreed that a Portuguese systems engineer, MS, was to study the software at IDC-RITL, so that he would later be able to implement it in Portugal. In order to do this he visited IDC in April, 1976, to learn the system and to discuss with LBP and EA the conditions for the implementation of the system.

MS left CCUL in December, 1976, thus ceasing to cooperate with CDCT. He was succeeded by MJFS, who visited IDC-RITL for 1½ months in the autumn of 1977. During this visit she received exhaustive education in the design and the operation of the EPOS/VIRA system. This training was supervised by EA, the chief systems programmer of IDC.

Education of Portuguese information officers was also performed in Lisbon. In late autumn of 1977 ME of IDC-RITL visited CDCT for a period of one month, during which she conducted introductory training of six new information officers. Two of them, TRA and SSC, visited IDC for three weeks in the spring of 1978, receiving further training by the IDC staff. The other four information officers are working as I&D (Information and Documentation) contact persons in state departments outside CDCT.

It may be emphasized here that there have been severe problems of appointing information officers to CDCT. For a long period GLS was alone in the information department. The situation of course improved when SSC and TRA joined CDCT. There is however a continuous increase in the demand for information services from CDCT, and the strain on the CDCT staff will continue to grow unless more information officers are appointed.

Two seminars were arranged in Portugal in June, 1977. The first one, which had the character of a one-week course, was held in Sesimbra outside Lisbon. It was directed towards library and documentation people, and presented different aspects of modern information retrieval methods and library automation. The second seminar was held during two days in Lisbon. It was more of a marketing/presentation seminar, aimed at researchers and other users of information. (See separate programs in App. 1.)

A table is given below with the exact dates of the education activities in the program. Apart from these visits continuous follow-up was performed through consultations on telephone and by mail.

1976-03-15--05-15	GLS and AS to IDC-RITL for basic training.
1976-04-19--30	MS to IDC for education in and discussion on EPOS/VIRA software.
1977-06-14--17	Seminar/course in Sesimbra on I&D techniques.
1977-06-20--21	Seminar/presentation days in Lisbon on information retrieval.
1977-09-18--10-29	MJFS to IDC for education in the EPOS/VIRA system.
1977-11-12--12-11	ME to CDCT, supervising training of Portuguese information officers.
1978-03-29--04-16	TRA and SSC to IDC for general training.

PLANNING AND ADMINISTRATION

During the development of this project need was felt for several meetings to discuss planning and administration. Natural growth and changes in the conditions under which the program was being led caused problems; the changing environment of information and documentation services had also to be coped with. A review of these meetings may be summarized as follows:

1976-05-10--15

CP came to Stockholm to define, together with RH, tasks to be carried out by IDC-RITL and CDCT in view of the cooperation program established (Report TRITA-LIB-1072). At this point the edict creating CDCT was being expected in May, 1976. CDCT was accordingly expected to start its experimental phase in June, 1976.

In fact the edict was published in September and no appointments took place before March, 1977.

1977-04-12--16

CP and GLS came to Stockholm to discuss the new situation, and ideas were exchanged in order to find the best way of recovering the time wasted. Details of contents and time schedules of the seminars to be held in Lisbon next June were discussed (TRITA-LIB-1082).

1977-06-22--29

RH and GC discussed in Lisbon with CP and GLS the solutions adopted April 12-16, after having had contact both with members of the Portuguese I&D Community and with potential end-users of CDCT services. It was then decided that the most effective course of action would be for ME to spend one month at CDCT in order to prepare several information officers and to assist GLS with further training. Details on maintenance of users file and on procedures concerning administrative problems were discussed and solutions arrived at.

1977-10-09--11

RH, CP and GLS met in Luxembourg (on the occasion of a EUSIREF meeting) to solve some problems arisen during the first three months of experimental services in Portugal.

1978-02-27--03-03

RH, ME, GC, CP and GLS held discussions in Paris with the CNRS staff about the increasing cooperation between Swedish, Portuguese and French centers of information and documentation. These discussions took place at CDST (Centre de Documentation Scientifique et Technique) and CDSH (Centre de Documentation Sciences Humaines).

During their stay in Paris, RH, ME, GC, CP and GLS discussed plans concerning the continuation of the Swedish-Portuguese cooperation project for the next three years.

As a result a detailed three-year program including a budget proposal was presented to SIDA (Swedish International Development Authority) and to the Portuguese authorities, and is now awaiting approval.

1978-10-06--11

GLS came to Stockholm to write, with ME and GC, this report which is the final report of Phase One of the Swedish-Portuguese Cooperation in the Field of Scientific and Technical Information and Documentation.

CONFERENCES

The staff of CDCT have been given the opportunity to attend the most important conferences in order for them to be able to establish contacts with colleagues in other countries and to learn about the developments in telecommunication and information networks and systems. A review of the conferences attended may be summarized as follows:

RECON User Seminar (RUSE 4),

organized by the European Space Agency - Space Documentation Service.
Frascati, Italy, May 20-21, 1976.
Attended by: CP, AS.

CDCT intended to become a user of the ESA-RECON system in the near future, and attending this seminar was thought a good way of gaining acquaintance with the problems of giving service by using interactive search systems. Opportunity was also given to visit the ESA Documentation Center and discuss access possibilities with Mr. Isotta and other members of the SDS staff.

EURIM 2: "Overcoming the Language Barrier",

organized by the Commission of the European Communities.
Luxembourg, March 3-6, 1977.
Attended by: CP.

This conference was considered to be of great interest because during the process of information transfer the need for translation arises at different stages, so it is important to know how this problem is faced in the international community. As all conferences, this one was also an excellent opportunity for the CDCT staff to meet colleagues from other countries, and database producers and users.

INSPEC Workshop.

London, July 25, 1977.
Attended by: GLS, MJFS.

The intention in attending this workshop was essentially to learn as much as possible about the INSPEC file, one of the most important files in the sphere of the hard sciences and technology.

6th Cranfield International Conference on Mechanized Information Storage and Retrieval Systems: "Characteristics and the Use of Data Banks and Data Bases".

Cranfield, July 26-29, 1977.
Attended by: GLS, MJFS.

As for this conference (apart from the usual opportunity to meet different kinds of people from the information community such as information officers, information managers, information scientists, and people from international or regional agencies involved in the work of coordinating information projects covering several countries) the paper presented there on the evolution of telecommunication facilities, computer possibilities and user needs, gave a good opportunity to perceive trends in the field of information processing and dissemination.

International Conference on the Improvement of the National Bibliographic Control,

organized by UNESCO.
Paris, September 12-15, 1977.
Attended by: CP, GLS.

The purpose in attending this conference on National Bibliographies was for the CDCT staff to get a general idea of the policies and problems involved in bibliographic control in order to be able to assess possibilities of cooperation between CDCT and the Portuguese National Library.

EUSIDIC Conference: "Today's Challenge: Planning for the Information Service User".

Berlin, November 9-11, 1977.
Attended by: CP, MJFS.

Being an information and documentation center CDCT was quite interested in attending a conference organized by the European Association of Information Services (EUSIDIC). This was considered the best way of becoming acquainted with information and documentation centers in other countries and the problems that beset them, and of learning how they deal with the problems. Discussions about EURONET were most useful in order to get an insight into the project and the problems connected with it.

European Regional Congress of Agricultural Librarians and Documentalists: "Modern Systems and Networks and the Reliability of Information",

organized by the International Association of Agricultural Librarians and Documentalists, and Gesellschaft für Bibliothekswesen und Dokumentation des Landbaues.
Hamburg, April 17-22, 1978.
Attended by: GLS, JHBC.

In the discussions on planning and administration between the IDC-RITL and the CDCT people it was agreed that CDCT should cover the field of agricultural information for current-awareness service. Attending this conference seemed to be the best way of gaining acquaintance with the state of affairs in this field.

The choice of people to attend was based on the facts that CDCT will be responsible for the renewal of the different databases, and that JHBC had been trained in Lisbon in order to enable him to supply computerized information services in the documentation service for which he is responsible in IPVR (Instituto Politécnico de Vila Real). One of the main tasks of this institute is to develop and advise in agricultural activities in the northern part of Portugal.

The expectations of CDCT were fully met both by the papers presented at the conference and by the contacts with database producers, agents from information sources, librarians, and representatives from international/regional agencies like FAO and CEC who gave advice on co-operation problems.

EURIM 3: "European Conference on the Contribution of Information Users to the Formulation of Information Policies and Systems Operation",

organized by ASLIB.
Munich, April 25-28, 1978.
Attended by: CP, GLS.

Again, this conference was quite fruitful as regards meeting members of the information community developing various kinds of activities. The conference was furthermore meant to fire discussion among the users of information services, in particular the potential users of EURONET.

Not a member of CEC, Portugal will certainly want to profit from the possibilities accruing from the implementation of a European network for data transmission. It is the aim of CDCT to alert the Portuguese authorities to the need for Portugal to be able to access the information resources available throughout Europe, and to this purpose CDCT is gathering as much information as possible in order to be able to answer questions about the EURONET project.

REUNIBER 78: "Conferencia Iberamericana sobre Información y Documentación Cientifica y Tecnologica",

organized by Instituto de Información y Documentación en Ciencia y Tecnologica.
Madrid, September 11-15, 1978.
Attended by: GLS.

This conference was organized on behalf of UNESCO and was the first one of its kind. It was intended to give people from Latin American countries the opportunity to discuss with European people speaking the same languages. Because of the similarity of the Portuguese and Spanish languages it was thought that discussions could be carried out together. This meeting was very important because it gave an idea ot the level of development of each country in the field of information and documentation. It was then possible to define areas where cooperation could start at short term, and to make plans for future cooperation in other areas where preliminary studies are needed.

Unfortunately it was not possible for any representative from Brazil to be present, so there has been no personal contact between CDCT and its Brazilian colleagues.

Finally the Portuguese delegates pointed out that Spanish and Portuguese speaking countries in Africa should be contacted in order to establish possible areas of cooperation.

FID/UDC Assembly.

Edinburgh, September 21, 1978.
Attended by: GLS.

CDCT shares with similar institutions in Brazil the responsibility for the editing of UDC (Universal Decimal Classification) in Portuguese. However, during the last three years nothing has been done in this field, and as GLS was attending a FID conference held in Edinburgh September 25-28 it was decided that she could represent CDCT at this assembly to become acquainted with the state of affairs of the projects undertaken by UDC committees.

FID General Assembly.

Edinburgh, September 22-23, 1978.
Attended by: GLS.

For the reasons mentioned above GLS was the Portuguese delegate to this general assembly.

39th FID Congress: "New Trends in Documentation".

Edinburgh, September 25-28, 1978.
Attended by: GLS.

This conference was very interesting not only because of the high level of most papers presented but also because of the quality of the discussions that took place.

Most people present at the conference were librarians, information officers and documentalists, so the perspective on the problems was quite different from that of database producers and suppliers. Problems concerning PTT policy or pricing policy were not discussed. On the other hand problems concerning technical assistance given to developing countries by international or regional organizations were thoroughly treated.

EUSIDIC Conference: "Information Policy for the 1980's".

Crawley, October 3-5, 1978.
Attended by: GLS.

This conference was very interesting because most of the papers presented aimed at provoking discussion among those present and fully succeeded in doing so. Representatives of different parts of information science were present; they could justify their arguments and penetrate far into various subjects. It was also a very fruitful opportunity to meet and discuss with the producers of the databases which are being reformatted by IDC-RITL and are to be run by CDCT.

CDCT is a EUSIREF Center and has been represented in the EUSIREF working group by its head, CP. The group meets regularly three times a year in Luxembourg under the sponsorship of CEC.

LITERATURE

In order to build up an information center with a good service capacity, you also have to build up a good collection of books and journals in the field or fields concerned. This is important in order to know the theory and background of the field(s) as well as what is currently happening. There is also a great need for all sorts of reference material like directories, encyclopedias, dictionaries and thesauri.

CDCT was earlier receiving some journals on an exchange basis but those did not suffice by far, and there were hardly any books in possession. IDC-RITL

has suggested which books and journals to buy and has helped CDCT with the acquisition procedures.

The execution of payments to other countries is always a problem in Portugal so the invoices have been paid at RITL within the Swedish part of the budget. The RIT Library has thus ordered almost all books and requested them to be sent to CDCT.

So far about 160 books have been ordered: 38 during 1976, 108 during 1977 and 14 during 1978. The journals have been ordered through Swets Subscription Service in Lisse, The Netherlands. CDCT will receive back issues of 21 journals and is currently subscribing to 39 journals that are invoiced to IDC-RITL.

EQUIPMENT

In the spring of 1976 two Texas Silent terminals with magnetic tape cassettes were purchased. One of them was placed at IDC-RITL and the other at CDCT. The CDCT terminal is used to produce cassettes with EPOS profile transactions; they are then sent by mail to IDC and processed on the IDC terminal. The CDCT terminal is also used for retrospective online searches.

To facilitate the Portuguese marketing and demonstrations of computerized information services, a portable Texas terminal was purchased in the spring of 1978.

Establishing contact between a terminal and a computer via the telecommunication network requires a modem between the terminal and the network. In order to be able to start the service in Portugal as soon as possible, one modem was purchased in Sweden for CDCT at the same time as an order for a modem was placed in Portugal. The modem delivered from Sweden was however stolen, and the delivery of the modem in Portugal was delayed for 9 months. So 2 new modems were purchased in Sweden for CDCT and delivered during the spring of 1978.

Among the tasks of CDC (the predecessor of CDCT) was to store documents which (due to value, need of special care on handling, or other reasons) cannot be subjected to ordinary loans, and to produce microfilm copies on request. Many of the requests came from researchers in the humanities in other countries. The equipment used was more than twenty years old, so its performance was less than acceptable and customers complained about the bad quality and the time required for delivery. CDCT inherited all the archives of documents from CDC. Present legislation prohibits disposing of them; they take up large storage areas and generally cause a great deal of work. It was realized that the best way of dealing with the whole situation would be to purchase a modern microfilming equipment, to copy all the documents, and then to duplicate the copies on request. Thus a portable microfilming equipment was acquired in the spring of 1978. The use of 16 mm microfilm allows the production of microfiche by mounting strips of microfilms in jackets. These microfiche can be duplicated and are much easier to handle than ordinary microfilms, both when storing and when mailing.

The microfilming equipment consists of:

- 1 microfilming processor camera
- 1 microfilm reader-printer
- 1 jacket reader-filler
- 1 microfiche master producer
- 1 microfiche printer
- 1 microfiche reader-printer
- 5 microfiche readers.

The microfiche readers are also used for other purposes within CDCT. An ordinary copy of each SDI search printout as well as an extra copy on microfiche are sent to CDCT from IDC-RITL. The fiche is used for back-up services. Here the information officer can follow up the results of the searches. It is also used when there is a request for a loan or a photocopy of the original document to which a reference, found in an SDI search, refers.

For the production of the Union Catalogue CDCT has been renting a "key-to-discette" equipment. The Catalogue will, in time, be produced on microfiche. Some of the readers listed above are to be distributed among important libraries that cannot themselves afford to buy this kind of equipment.

In order to facilitate the showing of pictures at demonstrations and courses, one transparency projector was purchased.

PRESENT AND FUTURE

CDCT is now becoming known in research circles in Portugal, and the demand for service is growing. The main objectives of the original plans have been more or less fulfilled and the demand for other activities is coming in. CDCT will soon start giving a current-awareness service using the EPOS/VIRA system at a computing center in Lisbon. For this service databases of especial interest to Portugal will be chosen. The first field of concern will be agriculture.

The cooperation with IDC-RITL in Stockholm is supposed to continue through the exchange of profiles, and the Portuguese databases will be available in Sweden in the same way as the Swedish databases are in Portugal. The profiles and the search results will be exchanged on magnetic tapes. There will be an exchange of searches also with other centers using the EPOS/VIRA system, such as CNRS in France; this work will mean an increased strain on the staff of CDCT with more profiling work, education, etc.

The demand for retrospective searches is great and CDCT has established contact with some of the big online suppliers. But this field is expanding very much and new systems are coming up all the time. The expansion does not so much consist in the setting up of new bibliographic databases (this market is now rather saturated) but in the offering of databanks in many different fields. A databank gives the full information straight away unlike bibliographic databases, which give references to other sources. The

demand for this type of information is increasing and there are many new services coming up offering databanks. The trouble here is that this information is not usually to be found in the already established services; it is often available through small in-house systems created for internal use. Each system has its own search method, and it is difficult for outsiders to keep the information about them up-to-date.

During the introductory period the service from CDCT has been given free, but users should become aware that there is a price for information, and they should start paying it. Knowledge of information resources should become an integral part of education at university level. CDCT has a role to play in the introduction of this study at the university. But this is not the only educational activity. CDCT has already begun to decentralize its activities and will continue to do so: this means that new information officers have to be educated and to be kept continuously up-to-date in the field. As information awareness and use grow in Portugal, more people in industry and libraries will themselves start using the different information systems. But there has to be a body of officers that can help coordinate the activities and arrange courses and seminars on databases and systems. This body will have to have a broader and more thorough knowledge of the available systems and services. CDCT is already active in EUSIREF, EUSIDIC's working group for referral activities, and could play an active role in the coordination work. But there are some difficulties to overcome. The greatest problem is staffing. With the present number of people working with the information service (two information officers and the head of the service) it is not possible to expand the service as desired, especially when the head of the information service, GLS, now is the acting head of CDCT and cannot devote her time to the service.

So far there has not been much cooperation between the different libraries in Portugal. The compilation of the Union Catalogue is one way of determining the resources so that they can be made more accessible and be more effectively used. This compilation sometimes requires cataloguing people's visiting libraries and investigating their holdings on site, a very time consuming and difficult work that has to be done very thoroughly. But the

work is not finished there: all the libraries have to be continuously followed up in order to check all changes in the holdings. In this updating work the libraries should be active themselves if possible, otherwise all libraries have to be revisited regularly by those responsible for the Union Catalogue in order for them to be able to make the Catalogue the valuable tool it ought to be.

Since computers were introduced into the field of information and documentation progress has been extremely rapid. The technical development and lowered costs for data storage have made possible the availability of bigger systems and greater quantities of data. Timesharing systems and telecommunication networks have allowed sharing of resources, at the same time as manpower costs have been rising. Alongside the bigger systems, smaller systems adapted for mini and micro computers are being developed. In order to be able to follow the trends and new developments in the field, it is very important for information officers and organizations to attend international conferences and to visit various institutions. This affords the possibility of using the latest sources for a good service, and of establishing contacts for future cooperation.

The authors would like to thank Åsa Viking for all her efforts in checking the language of this report; and Ann-Marie Brundin, who has very patiently typed all the drafts as well as the final version of the text.

LIST OF ABBREVIATIONS/NAMES USED IN THE REPORT

ANRT	Association Nationale de la Recherche Technique Paris, France
ASLIB	Association of Special Libraries and Information Bureaux London, United Kingdom
BLAISE	British Library Automated Information Service
BLLD	British Library Lending Division Boston Spa, United Kingdom
CCUL	Centro de Calculo das Universidades de Lisboa Lisbon, Portugal
CDC	Centro de Documentação Cientifica Lisbon, Portugal
CDCT	Centro de Documentação Cientifica e Técnica Lisbon, Portugal
CDSH	Centre de Documentation Sciences Humaines Paris, France
CDST	Centre de Documentation Scientifique et Technique Paris, France
CNRS	Centre National de la Recherche Scientifique et Technique Paris, France
CEC	Commission of the European Communities Luxembourg
COM	Computer Output Microform
CYCLADES	French computer communication network
DIALOG	Online interactive search system available through Lockheed Information System
EPOS	Profile handling program for VIRA
ESA	European Space Agency
EURONET	Telecommunication network for the European Communities
EUSIDIC	European Association of Information Services
EUSIREF	European Scientific Information Referral

FAO	Food and Agriculture Organization of the United Nations Rome, Italy
FID	Fédération Internationale de Documentation
IDC	Information and Documentation Center, RITL Stockholm, Sweden
I&D	Information and Documentation
INIC	Instituto Nacional de Investigacao Cientifica Lisbon, Portugal
INSPEC	Information Services In Physics, Electrotechnology and Computers & Control
IPVR	Instituto Politécnico de Vila Real Vila Real, Portugal
NTIS	United States Department of Commerce National Technical Information Service Springfield, VA, USA
ORBIT	Online interactive search system available through SDC
PTT	Administration des Postes, Télégraphes et Téléphones
QZ	Stockholm University Computing Center Stockholm, Sweden
RECON	Online interactive search system available through ESA
RIT	Royal Institute of Technology Stockholm, Sweden
RITL	Royal Institute of Technology Library Stockholm, Sweden
SDC	System Development Corporation Santa Monica, CA, USA
SDI	Selective Dissemination of Information
SDS	Space Documentation Service within ESA Frascati, Italy
SIDA	Swedish International Development Authority Stockholm, Sweden
TELENET	US computer communication network
UDC	Universal Decimal Classification

UNESCO	United Nations Educational, Scientific and Cultural Organization Paris, France
VIRA	Search system for the SDI service at IDC-RITL

Personal names

AS	Mr Amilcar Sernadas, CDCT
CP	Mr Carlos Pulido, CDCT
EA	Ms Eva Agerberg, IDC
GC	Mr Gunnar Carlsson, IDC
GLS	Ms Gabriela Lopes da Silva, CDCT
JHBS	Mr José Herculano Brito de Carvalho, IPVR
LBP	Mr Lars-Börje Pettersson, IDC
ME	Ms Malin Edström, IDC
MJFS	Ms Maria Joao Ferreira dos Santos, CDCT
MS	Mr Mendes dos Santos, CCUL
PS	Mr Peter Sabsay, IDC
RH	Mr Roland Hjerppe, IDC
SSC	Mr Sergio Seta de Carvalho, CDCT
TRA	Ms Teresa Roque Amaro, CDCT

CDCT INSTITUTO NACIONAL DE INVESTIGAÇÃO CIENTIFICA
Centro de Documentação Científica e Técnica

SEMINAR DCT 7701

SESIMBRA - HOTEL DO MAR

PORTUGAL

JUNE 14 - 17

SEMINAR COORDINATOR
Carlos Pulido
SECRETARY
Maria Lusa Barreira
COORDINATOR FOR INFORMATION SERVICES
Gabriela Lopes da Silva
COORDINATOR FOR DOCUMENTATION SERVICES
Maria de Fátima Branco
SYSTEM PROGRAMMER
Maria João Ferreira dos Santos
LECTURERS
Roland Hjerppe, Malin Edström, Peter Sabsay

The Seminar is supported by SIDA (Swedish International Development Authority) through the Swedish-Portuguese Agreement on Development Co-operation.
Assistance from Centro de Informática das Universidades de Lisboa under the supervision of Dr. Cândido Marciano.

Coffee, tea or refreshments will be served in the bar, during the intervals, free of charge.

All telegrams, telexes, telephone calls or any other extras will be at participants' expense.

Please try not to smoke in the meeting room.

Av. Gama Pinto, 2
Lisboa 4 Portugal

CDCT INSTITUTO NACIONAL DE INVESTIGAÇÃO CIENTÍFICA
Centro de Documentação Científica e Técnica

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SEMINÁRIO

INFORMAÇÃO E DOCUMENTAÇÃO CIENTÍFICA E TÉCNICA

Sesimbra 14 a 17 Junho 1977

PARTICIPAÇÃO POR CONVITE

NÚMERO DE PARTICIPANTES 25

3a. feira 14/6

18.00	Partida do CDCT para Sesimbra, em autocarro
19.00	Apresentação do Seminário e dos participantes.

4a. feira 15/6

09.00	Apresentação do Programa de Cooperação Luso-Sueco
09.30	Explosão da Informação
10.30	INTERVALO
11.00	Comunicação da Informação Científica e Técnica
12.30	ALMOÇO
14.00	Questões postas pelos participantes sobre problemas dos serviços de informação portugueses
15.30	INTERVALO
16.00	Sistemas automatizados de Recuperação da Informação
17.30	Discussão dos assuntos apresentados

CDCT INSTITUTO NACIONAL DE INVESTIGAÇÃO CIENTÍFICA
Centro de Documentação Científica e Técnica

5a. feira 16/6	
09.00	Pesquisa de informação
10.00	SDI
10.30	INTERVALO
11.00	RIS
11.30	ESA-RECON
12.30	ALMOÇO
14.00	Demonstrações do sistema RECON
15.30	INTERVALO
16.00	Telecomunicações, equipamento, redes
17.00	Automatização de bibliotecas
6a. feira 17/6	
09.00	Sistemas de representação do conhecimento
10.00	EPOS-VIRA
10.30	INTERVALO
11.00	Perfis
12.30	ALMOÇO
14.00	CDCT
15.00	Catálogo de publicações periódicas
15.30	INTERVALO
16.00	Acesso a documentos
17.00	Relações do CDCT com serviços internacionais (ESA, LOCKHEED, SDC, CNRS, etc.)
18.00	Partida para o CDCT em autocarro
18.45	Fim do Seminário

Av. Gama Pinto, 2
Lisboa 4 Portugal

S E M I N A R R U T I L 1

LISBOA - C D C T

PORTUGAL

JUNE 20 - 21

SEMINAR COORDINATOR

Carlos Pulido

SECRETARY

Joaquina Teresa Amaro

COORDINATOR FOR INFORMATION SERVICES

Gabriela Lopes da Silva

COORDINATOR FOR DOCUMENTATION SERVICES

Maria de Fátima Branco

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Centro de Documentação Científica e Técnica

SEMINÁRIO

INFORMAÇÃO E DOCUMENTAÇÃO CIENTIFICA E TÉCNICA

Lisboa 20 e 21 de Junho de 1977

Segunda-feira 20/6

9.30	Apresentação
10.00	CDCT - Acesso a documentos
10.30	INTERVALO
11.00	Explosão da Informação. Comunicação Científica e Técnica.
12.30	INTERVALO
14.00	Sistemas automatizados de recuperação da informação. Redes.
15.30	INTERVALO
16.00	SDI.RIS SDI através do sistema EPOS/VIRA
17.30	Discussão

Terça-feira 21/6

9.30	Serviços de informação clássicos e modernos
10.30	INTERVALO
11.00	Experiência portuguesa de SDI
11.30	Bases de dados acessíveis aos serviços SDI e RIS
12.30	INTERVALO
14.00	Sistema ESA-RECON
15.00	Demonstração do sistema ESA-RECON
17.00	Discussão
17.30	Fim do seminário

LOCAL DO SEMINÁRIO: CDCT
Av. Prof. Gama Pinto 2, LISBOA 4
(edifício do antigo Instituto de Física e Matemática)